Item No._____

CITY OF SUNNYVALE
REPORT
Planning Commission

June 27, 2005

SUBJECT: **2004-0168– City of Sunnyvale –** Study Issue to consider options for Transportation Demand Management (TDM) for new High-Density Residential Development.

REPORT IN BRIEF

The purpose of this study is to examine how high-density residential development may encourage reductions in single occupant vehicle trips during the peak hour traffic periods. The general term used to describe transportation management systems is Transportation Demand Management (TDM). Methods of implementing TDM are divided into two categories for this report, land use (site development standards) and programmatic (incentives and information) techniques. Historically, both nationally and locally, TDM has been implemented at the demand or employer end of the spectrum rather than at the supply or residential end. This point of emphasis is due primarily to financial aspects, practicable management of programs, and inflexibility of employment location compared to flexible residential location. Sunnyvale has had success with high intensity industrial development implementing site design features and other TDM programs. However, Sunnyvale does not have experience with residential TDM program techniques.

This study provides the opportunity to consider strengthening of Sunnyvale's existing multi-modal policies and encourage new high-density residential development to take advantage of the many transportation resources that are available. The City currently has multiple land use policies, design guidelines, and zoning standards supporting a variety of choices in transportation. These choices include walking, bicycling, public bus transit, public light rail transit, Caltrain rail system, as well as regional ride share and carpooling programs. Staff has identified three geographic areas of Sunnyvale that are good candidates for emphasized TDM due to their proximity to transit, likelihood of new or redevelopment, and existing high-density development zoning or general plan designation. These areas are Tasman and Fair Oaks (ITR 8), Downtown, and along El Camino Real. Staff is recommending new polices that identify these areas as targeted high-density TDM development that require specialized attention to TDM site development features. Staff also recommends additional site development policies outlining expected transit and pedestrian orientation for building and site improvements.

BACKGROUND

The Study Issue is entitled Transportation Demand Management (TDM) program for Higher Density Residential Projects. The issue was originally proposed by City Council in 2003 but fell below the line. During the 2004 Study Issue process the project was ranked third by the City Council and 1 out of 5 by the Planning Commission. The Bicycle and Pedestrian Advisory Committee ranked the item 8 out of 14 in 2004. The project was deferred until 2005 due to midyear reranking last year to study signage requirements along El Camino Real for auto dealerships and large retail.

Transportation Demand Management (TDM) is commonly defined as actions that reduce single occupant vehicle trips during the peak hours. However, as congestion has increased over time and the demand has spread beyond the typical peak hour of commuting, TDM research is evolving to account for total vehicle miles traveled not just peak hour trips. Sunnyvale related TDM programs address the peak hour traffic period which is on weekdays from 4-6 p.m. The objective of TDM is to improve traffic flow and ease congestion. Related aspects of TDM are implied higher rates of public transit utilization and improved air quality by reduced vehicle emissions from fewer miles traveled. TDM generally supports a variety of choices for reduced vehicle usage, such as the following:

- Walking
- Bicycling
- Public Transit (bus, light rail)
- Rail (Caltrain, ACE)
- Carpool
- Telecommuting

The following tables show comparisons of how people choose to travel to work.

Mode of Transportation to Work (Census 2000)						
	% Drive Alone	% Carpool	% Transit	% Bike	% Walk	% Work at Home
Sunnyvale	80%	10%	4%	1%	2%	3%
SC County	77%	12%	4%	1%	2%	3%
Bay Area	68%	13%	10%	1%	3%	4%
CA	72%	15%	5%	1%	3%	4%

Sunnyvale Work Trips % Mode Changes 1990-2000 (Census)			
Method	1990 Mode %	2000 Mode %	Points
Drove Alone	81.97%	80.14%	-1.83
Carpooled	9.60%	10.43%	0.83
Bus	1.77%	2.60%	0.83
Rail	1.18%	1.12%	-0.06
Bicycle	0.91%	0.73%	-0.17
Walk	1.60%	1.54%	-0.06
Work at Home	2.26%	2.62%	0.35
Other Modes	.93%	0.81%	-0.12

Sunnyvale has previously required employers to implement TDM Programs for certain developments. TDM requirements have been negotiated on a project specific basis in Sunnyvale for high intensity industrial development (greater than 35% FAR). The Moffett Park Specific Plan requires high intensity development above the standard FAR to implement a predetermined level of TDM. However, there are no City mandated or sponsored residential TDM programs in place for Sunnyvale.

Although TDM goals for trip reduction are firm, the methods for reaching the goals are flexible. Traditionally each individual TDM program outlines the goal and which techniques are intended to achieve the stated goal. However the individual techniques vary by location, and even by the year, based on efficiency and effectiveness. Techniques may be altered annually to meet the needs of the business. There is no one size fits all solution to TDM.

EXISTING POLICY

Selected Goals and Policies are listed below. Attachment "F" includes a comprehensive list of relevant Goals and Polices from the General Plan.

Land Use and Transportation Element

Policy R1.9 Support flexible and appropriate alternative transportation modes and transportation system management techniques that reduce reliance on the automobile and serve changing regional and City-wide land use and transportation needs

Action Statements

R1.10.2 Support alternative transportation services, such as light rail, buses, and commuter rail, through appropriate land use planning.

R1.10.3 Encourage mixed uses near transit centers.

Policy C2.4 Determine appropriate density for housing based on site planning opportunities and proximity to services.

Action Statements

C2.4.1 Locate higher density housing with easy access to transportation corridors, rail transit stations, bus transit corridor stops, commercial services, and jobs.

GOAL C3 ATTAIN A TRANSPORTATION SYSTEM THAT IS EFFECTIVE, SAFE, PLEASANT, AND CONVENIENT.

Action Statements

C3.1.5 Promote the reduction of single occupant vehicle (SOV) trips, and encourage an increase in the share of trips taken by all other forms of travel.

Policy C3.5 Support a variety of transportation modes.

Action Statements

C3.5.3 Support land uses that increase the likelihood of travel mode split.

Policy C3.6 Minimize expansion of the current roadway system, while maximizing opportunities for alternative transportation systems and related programs.

Action Statements

C3.6.2 Promote public and private transportation demand management.

C4.2.3 Develop incentive programs to reduce parking demand, support alternative transportation, and reduce peak period traffic.

Air Quality Sub Element

Policy 3.7B.1 Utilize land use strategies to reduce air quality impact.

Action Statements

3.7B.1a. Promote extension of transit systems, and locate higher density development/redevelopment along transit corridors.

3.7B.1b. Promote mixed land use development that provides commercial services such as day care, restaurants, banks and stores near employment centers, reducing auto trip generation by promoting pedestrian travel. Promote neighborhood commercial and park uses within residential developments to reduce short auto trip generation by making pedestrian and bicycle trips feasible (for example, require sidewalks, bike trails and bicycle parking areas).

Policy 3.7B.2 Assist employers in meeting requirements of Transportation Demand Management (TDM) plans for existing and future large employers and participate in the development of TDM plans for employment centers in Sunnyvale.

Citywide Design Guidelines

Site Plan

A9. Provide pedestrian links between residential developments and nearby employment and shopping centers, schools and parks to encourage pedestrian activities.

Parking Circulation

A7. Separate pedestrian and automobile traffic paths, and minimize conflict areas for safety.

A9. Large developments shall provide sufficient bicycle parking and covered lockable racks close to building entrances.

Downtown Specific Plan

GOAL B. ESTABLISH THE DOWNTOWN AS THE CULTURAL, RETAIL, FINANCIAL AND ENTERTAINMENT CENTER OF THE COMMUNITY, COMPLEMENTED BY EMPLOYMENT, HOUSING ANDTRANSIT OPPORTUNITIES.

GOAL C. PROMOTE A BALANCED STREET SYSTEM THAT SERVES ALL USERS WELL REGARDLESS OF THEIR MODE OF TRAVEL.

Policy C.2. Encourage strong pedestrian and bicycle linkages through the downtown.

Policy C.3. Promote the use of public transit by intensifying land use and activities near transit cores.

Policy C.4. Encourage shared parking in the downtown to minimize the amount of land devoted for parking areas and manage parking so it does not dominate mode choice decisions or the built environment.

Public Improvements for Future Downtown

Chapter 7 Circulation Plan

- Enhancement of bus transfer facility on Frances Street
- Creation of bicycle lanes on Evelyn, Iowa and Sunnyvale Avenues
- Installation of Mathilda Avenue railroad overpass improvements

Housing and Community Revitalization Sub Element

Policy A.1 Maintain a supply of residential land for new housing construction.

Action Statements

A.1.d Study increasing the density of residential areas near transit stops and along major transportation corridors in conjunction with regional transportation plans.

Policy A.3 Continue to allow housing in commercial zoning districts.

Action Statements

A.3.a Maintain provisions of the zoning code that permit housing to be constructed in commercial districts after planning review.

DISCUSSION

The Transportation Demand Management concept has limited practice with supply (residential) implementation across the nation. An abundance of information is available pertaining to TDM techniques from the demand (employer) side of the equation. Cost benefit analysis of approaches, as well as likelihood of trip reduction rates has been thoroughly reviewed from both conceptual and specific project approaches for employer based TDM. In fact the City of Sunnyvale already has a "TDM Toolkit" prepared by a consultant that is used for guidance on implementing employer-based TDM requirements.

During this study of TDM for residential uses staff relied heavily upon employer based TDM techniques to supplement the general lack of residential TDM experience and resources to draw from. The primary sources of information researched for the project included contact with VTA Staff administering the Residential ECO Pass program, local housing developer experience, the City of Berkeley analysis of TDM requirements for its Downtown, the City of Boulder citywide TDM efforts, the County of Arlington, Virginia requirements for special site plan review permits requiring TDM techniques, and Federal Highway Administration reports. City staff has also used GIS to provide background data

and mapping for an understanding of current travel patterns and land use in the City.

This report addresses a variety of planning factors involved in determining appropriateness and potential success of implementing a TDM program. The outline for this discussion is stated below.

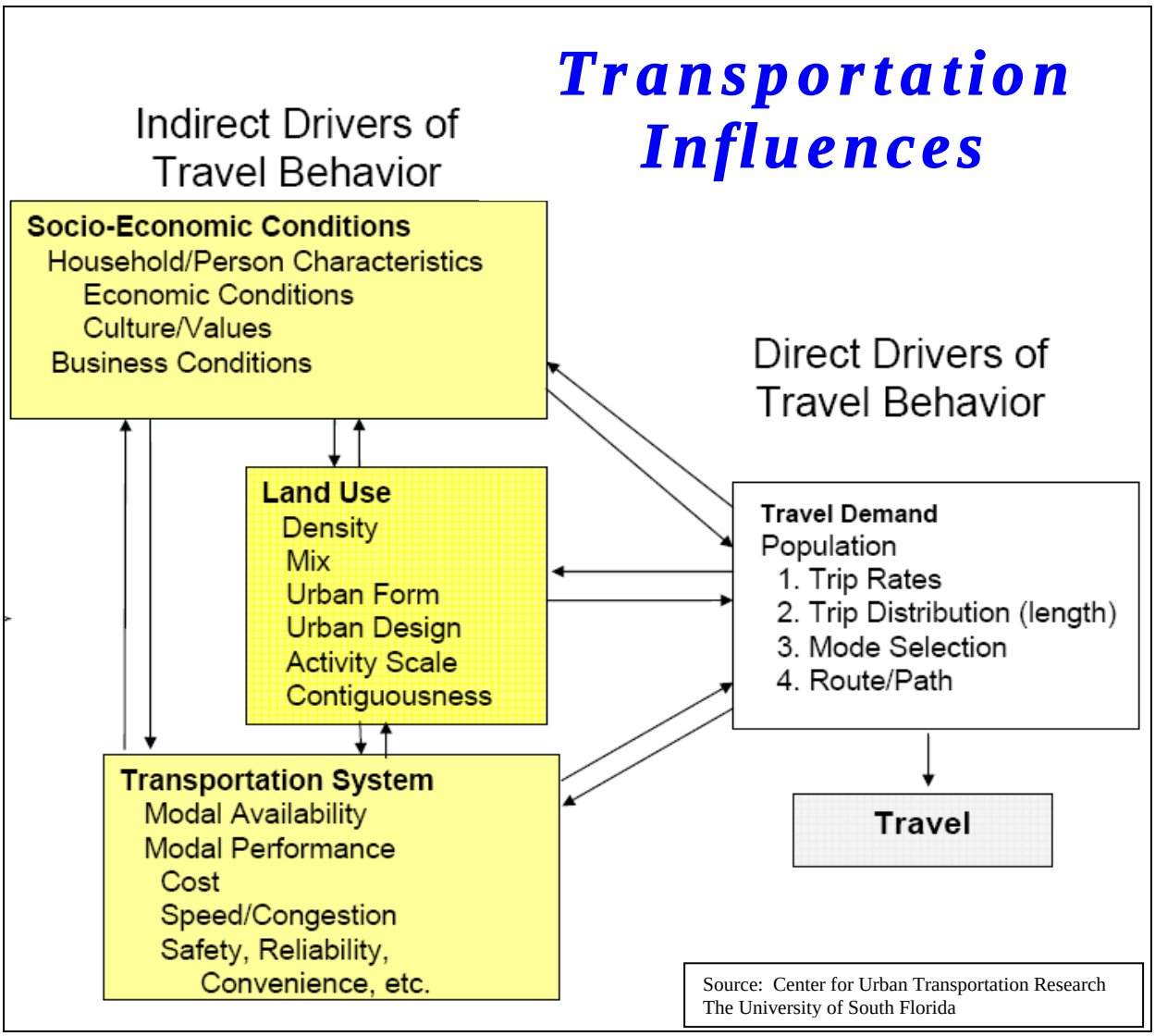
Planning Factors

- Travel Influences
- TDM Characteristics
  - -General
  - -Residential
- High Density Geography
  - -Zoning Location
  - -Transit Land Use Guidelines
- Administrative Programs
  - -VTA Costs
  - -Caltrain Costs
- Circulation Routes
  - -Transit
  - -Bicycle
  - -Pedestrian
  - -Existing Programs
- Census Demographics
  - -Mode Splits
  - -Travel Times

Travel Influences

Transportation mode choice is a complicated issue that is nearly impossible to scientifically quantify or predict. Issues that are commonly associated with travel behavior are listed below:

- Attitude of travelers, *some people will always choose to drive*
- Availability of car to commuter
- Availability of convenient alternative transportation
- Daily errands, trip chains
- Speed
- Reliability of trip time
- Reliability of transit
- Cost of travel
- Cost of parking
- Household income
- Gender tendencies, *women are more likely to drive*
- Household size, *families with children are more likely to drive*
- Flexibility of arrival and departure (home and work)
- Change of employment location or home location



Most of the above attributes are not within the control of a public agency. At the city planning level the public agency can influence the density of residential development, location of employment areas, and the physical improvements of a circulation system. Once the land use pattern is established, public agencies have limited ability to directly influence travel behavior. Market based influences on travel behavior are related to cost of both vehicle trips and alternative modes, as well as the opportunities for and cost of a home with accessibility close to their work site. The most influential market element on travel behavior has been shown in a number of studies to be the cost of parking. When parking is free at the destination there is minimal incentive to change travel behavior due to the high level of automobile convenience and the relative low cost of driving.

TDM Characteristics

Cited below is the Oregon Department of Transportation TDM applicability with checkmarks indicating Sunnyvale has or is able to achieve the standard. Some issues, such as community commitment, have not been evaluated for Sunnyvale and no conclusions were made.

TDM Works best under the following general circumstances:

- ❖ Favorable community demographics for employment/residency.
- ❖ Appropriate travel distances for the trip to work.
- ❖ Appropriate travel patterns for the trip to work.
- ❖ Supportive community attitudes.

Examples of favorable community demographics include:

- Existence of major employer work sites with in excess of 250 employees.✓
- Existence of clusters of smaller employer work sites with 5 to 50 employees at each site. ✓
- Constrained parking at employer work sites.
- Clustering of worker residences.
- Average or below average household incomes.
- Residential densities of 8-15 dwelling units per acre for 30 minute transit service. ✓
- Residential densities of 15-20 dwelling units per acre for 15 minute transit service.

Examples of appropriate travel distances include:

- Carpool trip lengths of at least 5 miles (one way). ✓(Time equivalencies 25 minutes)
- Vanpool trip lengths of at least 20 miles (one way). ✓(45 minutes)
- Transit trip lengths of at least 2 miles (one way). ✓(25 minutes)
- Bicycling trip lengths of up to 5 miles (one way). ✓(25 minutes)
- Pedestrian trip lengths of up to 1.5 miles (one way). ✓ (25 minutes)

Examples of appropriate travel patterns for the trip to work include:

- Clearly identifiable work trip origins (cross streets and zip codes).
- Clearly identifiable work trip destinations (cross streets and zip codes). ✓
- Clearly identifiable travel patterns for the trip to work (corridors). ✓
- Moderate to heavily congested commute corridors (LOS D or worse at the peak). ✓

Examples of supportive community attitudes include:

- Environmentally concerned employers. (not evaluated)
- Community commitment to clean air. (not evaluated)
- Existence of trip reduction ordinances.
- Existence of transportation impact fees. ✓
- Emphasis on transportation investment in system preservation or management rather than capacity expansion. ✓

Residential TDM Techniques

The following techniques have been gleaned from staff research during this study and postulated by staff as the most effective and potentially practicable for Sunnyvale in regards of residential TDM.

Program

- Property Transportation Coordinator
- Guaranteed Ride Home Program
- Provide yearly Transit Passes to residents (Eco Pass)
- Annual Survey of vehicle trips for reporting of effectiveness
- Distribute transit and rideshare, and carpool information:
    a. Provide new-resident tenant/homeowner commuter package
    b. Distribute transit and ridesharing information periodically
    c. Participate in "Spare the Air" notices and similar activities
- Coordinate carpooling within neighborhood: *e.g. work, school, childcare*
- Provide website hotlinks to www.511.org
- Participate in car share program

Site Development

- Provide Transportation Kiosk or information display at site
- Site design connections emphasized
- Provide for improvements of bus stops, may include real time information display upgrades
- Bicycle facilities: bike storage/parking facilities, guest parking
- Parking unbundled from home purchase
- Parking requirement reductions, mandate less covered parking
- Carpool/van pool loading area
- Develop childcare facility on site or for neighborhood
- High speed network infrastructure for telecommute to work

High Density Geography of Sunnyvale

High and very high-density residential zoning in Sunnyvale is designated as R-4 and R-5 zoning districts and the within Downtown Specific Plan (DSP) Blocks 1a, 4,5,6,14,15, and 16. DSP Block 18 is technically a Mixed-Use block not a high density block. Housing is also permitted within Commercial zoning districts, but does not have a specific residential density standard. Mixed Use and exclusive housing development in commercial zones are assumed to be high density for the purpose of this study and its recommendations.

The R-4 and R-5 densities range from a minimum of 27 units per acre to 45 units per acre and a maximum of 78 units per acre in Block 1a of the Downtown. Attachment "B" illustrates the location of existing high-density zoning and general plan designated areas. These high-density areas represent 3% of Sunnyvale's total land area. 100 percent of the high-density areas are within ¼ mile of transit stop, however only 62 percent are within a ¼ mile of a

high activity stop. "High activity" means that the stop is in the top 10% of the existing 350 stops for the City of Sunnyvale; generally used by staff to indicate preferred routes or levels of service.

The Valley Transportation Authority (VTA) recommends in the *Community Design and Transportation Best Practices* manual an average density of 40 units per acre within 1/3 of a mile of a transit station with rail and 20 units per acre for major bus stops. Along rail corridors, such as Tasman Light Rail and Caltrain, the average density within 1/3 of a mile is recommended to be 35 units per acre.

Due to the low amount of high density zoning in Sunnyvale no station areas or corridors meet these recommended levels of density for transit. For Sunnyvale the identifiable local station area is the Downtown multi-modal center. The Downtown at complete buildout of the Specific Plan calculates out to 15 units per acre due to the single family zoning north of downtown. Factoring only the area south of Caltrain the density approaches 24 units per acre at buildout of the DSP.

In regards to bus corridors and major stops, the segment of Fair Oaks Avenue between El Camino Real and Old San Francisco Road and the El Camino Real/Wolfe Road stop are both built out at approximately 13 units per acre. Tasman/Fair Oaks ITR area development trends indicate an average density approaching 19 units per acre (medium density) before factoring in the adjacent mobile home park densities of approximately 10.5 units per acre which significantly drop the overall average density.

Circulation Routes

The primary transit service within Sunnyvale is provided by buses. The majority of the city (90%) is within a ¼ mile radius of a bus stop (Attachment B). The major north south bus routes in Sunnyvale are on Hollenbeck, Sunnyvale-Saratoga/North Mathilda, and Wolfe/North Fair Oaks. The major east west lines are located on El Camino Real, Homestead, Washington/Evelyn, Fremont, Persian, and Java Drive. One particular bus route, #55, circulates through the Lakewood Neighborhood and Tasman area and through the Remington area rather than on a direct route through the city in order to maximize area served. Maximizing area served is counter to maximizing speed and efficiency. The most heavily used line is the El Camino Real bus line which stretches for 27 miles across the county. Times vary for weekday headways of every 12 minutes to 60 minutes between arrivals. Most routes do not have weekend service or late night service. VTA is also studying implementing Bus Rapid Transit for the county and El Camino Real is a likely route for this limited stop system.

Light Rail Transit has very limited availability in Sunnyvale with 9% of the land area within ¼ mile of a station. Of that 9% only 3% is residentially zoned land. The line runs along Tasman Drive and then along Java Drive through Moffett Park. The benefit to residents along the Light Rail line is the direct connection to major employment areas of Moffett Park in Sunnyvale and to Santa Clara and North San Jose employment areas to the east. Weekday headways are every 15 minutes with substantial headway increases during the evenings and weekends.

Caltrain or rail is the second highest utilized form of public transit at 27% of commute transit trips. Caltrain operates trains during both weekdays and weekends with an emphasis on service during peak commute hours. Trips to San Francisco take over 1 hour 40 minutes with regular stop trains. Beginning in the summer of 2005, limited stop Baby Bullet Trains will stop in Sunnyvale and reduce the commute time to San Francisco to approximately one hour.

Pedestrian walk-to-work mode of transportation is most likely to occur within the commercial area destinations of the city rather than the industrial areas. The existing network of sidewalks connects residential areas to commercial areas and has limited connections to industrial areas due to traditional segregation of these dissimilar uses. Sunnyvale has an extensive sidewalk network for residential and commercial areas, but there are deficiencies in some former county pockets residential neighborhoods. The general cul-de-sac nature and layout of streets in Sunnyvale minimizes the convenience to walk to commercial and industrial destinations. As properties redevelop sidewalk improvements are a common requirement. The Transportation Division of Public Works is considering proposing a separate study for creation of assessment districts to complete residential sidewalk networks. Sunnyvale is incrementally improving sidewalk networks in industrial areas to increase pedestrian safety and ease of use.

The City of Sunnyvale has established a network of bicycle facilities comprised of bike lanes, bike routes, and bike trails. These routes are primarily located on the city's arterial and collector street system. Primary north-south routes include Mary, Sunnyvale-Saratoga, and Wolfe. Primary east-west routes include Reed, Maude, and Homestead, Caribbean, and Moffett Park Drive. Bicycle improvements are proposed to bridge the gaps in connectivity caused by freeways and rail lines. Overpass bridges are proposed for I-280 connecting at Mary Avenue, US 101 via Borregas Avenue, and State Highway 237 via Borregas Avenue. An upgraded overpass for Mathilda Avenue over the railroad tracks is also planned and in the design phase while and underpass along Bernardo Avenue is being studied. Additional significant future connections include Evelyn Avenue bicycle lanes and the planned Mary Avenue extension to Moffett Park.

Existing Programs

To date the City has not required TDM of residential developments. Communication with VTA indicates that there are currently no apartment complexes or HOAs in Sunnyvale which participate in their residential ECO Pass program. Caltrain does not have a residential TDM program, but does offer employer based discounts on monthly passes (Go Pass). A residential ECO Pass provides reduced-rate universal passes for residents of a development to ride VTA buses and light rail. The ECO Pass does not include Caltrain transportation. There are both employer and residential based ECO Pass programs.

The ECO Pass program requires participation by all residents age 5 or greater and is only allowed for projects that have 25 or more units. The comparative cost for the ECO Pass program is full participation at a cost of $60 per resident versus an equivalent cost of approximately $900 for a yearly universal pass. Round trip individual VTA fare is $3.50 regardless of distance traveled; however, transfers have additional costs.

ECO Pass example: The Traditions Townhome complex was evaluated based on Census 2000 data. There are 169 households and 352 persons age 5 or greater in Traditions. Assuming a transit usage rate of 5%, 18 individuals would regularly ride transit to work from the site. If a universal pass were purchased by the 18 regular riders the total cost would be $16,200. If an ECO Pass program were instituted it would cost the HOA $21,120 annually or an average of $125 per household. This is $5,000 more than the individual passes and has a cost for all households, not just those that use transit. In this scenario VTA transit ridership would need to approach 7% for an ECO Pass program to break even with individual universal passes. However, this calculation does not account for non-commute trips or non-daily or regular ridership which also helps reduce total vehicle miles traveled.

There is no residential discount program for Caltrain ridership. Assuming a Sunnyvale resident is commuting to San Francisco they are crossing three fare zones. A monthly three-zone pass costs an individual rider $132.00. A day pass for a three-zone ticket costs $10.00. In addition to Caltrain fares, transfers have additional fees if not connecting to VTA. Caltrain does offer a Go Pass at a discounted rate of $79.99 a month through employers only, with a minimum of 70 employees to qualify. The GO Pass program requires that a pass be bought for all employees just like an ECO Pass requires everyone to participate.

Another consideration for requiring residential TDM programs is existing TDM programs provided by employers. There is no estimate of the degree of TDM financial incentives or other programs already provided to Sunnyvale residents by their employers. Requiring TDM participation in a transit pass program may

be an additional and unnecessary cost if that pass is already being provided by an employer. Agency regulations would not permit partial exemption of a resident that has an employer pass. Employers are able to offer a transit benefit through the federal tax code for the purchase of transit passes. The federal tax code allows a monthly benefit of up to $105 tax free through employers. Other employer based TDM provisions often include carpooling programs, recreational amenities on site, and flexible work hours to reduce peak hour trips. Most TDM research indicates that financial incentives as well as availability of alternative choices provide the highest degree of trip reduction when parking is free at the destination.

The City does not independently facilitate ridesharing or carpool matching, however regional organizations do provide these services. The primary resource is www.511.org which provides opportunities for persons to participate in rideshare programs throughout the region.

Census Demographics Journey to Work

Sunnyvale Mode Splits Census 2000

Method	*Mode %*
Drove Alone	80.14%
Carpooled	10.43%
Bus	2.60%
Rail	1.12%
Bicycle	0.73%
Walk	1.54%
Work at Home	2.62%
Other Modes	0.81%

(See Attachment "E" for geographic distribution by Census Tract of Mode Choice)

Journey to work data is statistically sampled by the US Census Bureau for each decennial census. Journey to work is the only local based travel survey data available. Journey to work was calculated by Census Tracts. Journey to work data includes among other things type of mode, travel times, travel distance. Other data for commute distances and times are available on regional and national levels.

The primary reasons for mode choice is distance or time to the destination, followed by the required route to the destination. The choice of route to work is often influenced by intermediate destinations. (e.g. drop off kids, coffee, etc.), as well as directness and speed. Non-automobile modes are generally at a disadvantage to the flexibility of route options of a driver without adding substantial time to the commute. Short trips that include walking would be an exception to flexibility rule.

Within the City of Sunnyvale 31% of resident workers work within the city, compared to a county average of 39%. The average one-way commute distance for the county is 16 miles for people working outside of their home *(table next page).*

Travel Time to Work	Sunnyvale		Santa Clara Co.	
Total workers 16 years and over	71,736		828,927	
Total did not work at home	69,858	97%	803,059	97%
Less than 5 minutes	1,127	2%	11,118	1%
5 to 9 minutes	5,413	8%	55,600	7%
10 to 14 minutes	12,382	17%	103,122	12%
15 to 19 minutes	13,764	19%	130,396	16%
20 to 24 minutes	14,148	20%	140,577	17%
25 to 29 minutes	4,856	7%	56,320	7%
30 to 34 minutes	9,273	13%	132,327	16%
35 to 39 minutes	1,342	2%	22,965	3%
40 to 44 minutes	1,711	2%	32,980	4%
45 to 59 minutes	2,913	4%	63,295	8%
60 to 89 minutes	1,925	3%	39,220	5%
90 or more minutes	1,004	1%	15,139	2%
Worked at home	1,878	3%	25,868	3%

Note that 73% of work trips have a duration less than 30 minutes. Note from the table below that within that 30 minute time frame only 1% of those trips are by public transit. As the duration of the commute increases the usage of transit also increases. Transit becomes more competitive for longer commutes versus the same trip in a car as there are efficiencies with a direct route and not having to find parking at the final destination; these help to compensate for the multiple stops of transit. Short trips on transit are much slower on an average speed basis (even before adding the waiting time for the transportation) than automobile trips. The lower speed results in short distance trips being pushed into the longer duration segments even though distance wise it may be a short trip.

% Trips by Transit by Duration of Commute

Method	**Sunnyvale City**		SC CO
Total workers 16 years and over who worked away from home	**69,858**		
Total less than 30 minutes	**51,690**		
Public transportation	**503**	**1%**	1%
Other means	**51,187**		
Total 30 to 44 minutes	**12,326**		
Public transportation	**683**	**6%**	4%
Other means	**11,643**		
Total 45 to 59 minutes	**2,913**		
Public transportation	**462**	**16%**	7%
Other means	**2,451**		
Total 60 or more minutes	**2,929**		
Public transportation	**1,054**	**36%**	20%
Other means	**1,875**		

The average travel speed on transit is 17 miles an hour versus 32 miles and hour for automobiles in Santa Clara County. Within Sunnyvale commuting the four-mile west to east commute across town on El Camino Real (Bus Route #22) would likely take about 15 minutes to drive and 25 minutes on the bus during peak hours. A bicycle trip on the same route is estimated to take 25 minutes. Driving in a car from the Lockheed-Martin Bus Terminal to I-280 via Mathilda Avenue (Bus Route #54) would take approximately 22 minutes during the evening commute and a bus is estimated to take 30 minutes. A bicycle commute on the same route would likely take 35 minutes. The distance traveled is 5.7 miles. A similar route from Lockheed Martin to 280 via Wolfe Road (Bus Route #26) would take 33 minutes by bus and an estimated 25 minutes by car for the 6.5 mile distance. The above time estimates are in route times not door-to-door times.

FISCAL IMPACT

Amendments to policies and ordinances have no direct fiscal impact to the City. Requiring new development to implement site development standards will also result in no direct fiscal impact to the City. However, requiring programmatic TDM elements that require monitoring and reporting or administration of benefits by City Staff would have a direct impact to General Fund finances. Costs could include direct financial incentives of purchasing or providing transit passes or vouchers, as well as staff time to administer requests and monitor compliance. If the City Council directs staff to prepare TDM Program policies with incentives or mandatory requirements, an estimate of cost would be provided for a specific recommended proposal. The benefit of such programs is difficult to estimate at this time, but analysis of other city programs concludes a 1-2 percentage point reduction in single occupant vehicle trips may be achievable with extensive subsidies. A previous transit study completed in 2001 for the Sunnyvale Transportation Division estimated that a program establishing Sunnyvale as a fare free zone would cost 2 million dollars and raise transit ridership by 20-50%. The result would be a mode split change from the current 4% up to 6%.

Costs to Developers/Residents
Programmatic elements would have on-going costs to residents. Programs that include ECO Passes or similar transit programs would average $15/month per average sized household. Hiring the services of a part-time TDM coordinator (estimated at 5 hours per week) could cost a household in 50-unit development $20 per month; a 150 unit development may have some economies of scale resulting in $10 per month. An additional expense of $25-$30 per month is significant to some households.

Requiring site development features that support alternative modes of transportation have no costs to the city. Staff time to review these features may increase slightly, however over time fees for plan reviews should reflect the costs

of those services. Because many of the suggested features are frequently provided in developments, the additional costs of doing it well are considered nominal. These additional or enhanced site development features can be effectively absorbed into the development budget.

CONCLUSION

Across the nation trip reduction has been primarily addressed on the demand or employment side of the equation rather than at the source or home side of the equation. Travel behavior has a complicated set of influences that are primarily out of the local public agencies direct control once land use patterns and circulation routes are in place. However, Sunnyvale has existing high-density housing and potential new high density residential near its major existing transit facilities. This presents an opportunity to raise awareness and potential usage of these facilities for a significant number of people. Furthermore, the City of Sunnyvale is committed to upgrading its bicycle and pedestrian networks throughout the city in an effort to increase safety and convenience for these alternative modes of transportation.

Program based TDM techniques generally include an individual administrator, financial incentives or requirements, and information and marketing programs. Examples may include provision of universal transit passes, coordination of carpooling, and updating site maps and brochures. There is an ongoing cost burden to program TDM techniques potentially for both the City and individual households. There is also potential overlap with existing TDM programs implemented through employers.

Design oriented TDM techniques encourage alternative transportation usage by increasing convenience and safety for alternative transportation. These methods may include direct connections to public sidewalks and bicycle paths, pedestrian oriented design, improved bus stops and shelters, bicycle parking, and on-site informational kiosks for transit and carpooling opportunities. Costs of site improvements would be born by developers as is typical for all site development standards. Ongoing costs for maintenance of TDM features would not significantly vary from standard development requirements for both site and public right-of-way improvements.

The City of Sunnyvale policies support the concepts behind Transportation Demand Management and alternative forms of transportation. The City policies are not specific to the source of TDM programs (job based or resident based). Full blown residential TDM programs are uncharted territory and would appear to be more costly than employment based programs. Programmatic elements introduce additional on-going costs to residents. Site development efforts and other non-programmatic elements are primarily one-time costs, are cost effective and are supported by City policy.

PUBLIC CONTACT

Public contact was made through the posting of the Planning Commission agenda on the City's official notice bulletin board, posting of the agenda and report on the City's Web page, advertising in the *Sun* newspaper, and the availability of the report in the Library and the City Clerk's office. Staff also discussed issues with VTA staff and local housing developer, Classic Communities. The consensus was that reasonable and practicable techniques are available to site design, programmatic requirements may be burdensome. Classic Communities emphasized that reasonable requirements should be limited to locations in close proximity to high usage transit areas and not a blanket requirement throughout the community.

Notice of Public Hearing	Staff Report	Agenda
• Ad published in the *Sun* newspaper	• Posted on the City of Sunnyvale's Website • Provided at the Reference Section of the City of Sunnyvale's Public Library	• Posted on the City's official notice bulletin board • City of Sunnyvale's Website • Recorded for SunDial

Environmental Review

This Study Issue and its recommendations have no possibility of a significant detrimental environmental impact, and therefore, no additional environmental review is required. (CEQA Guidelines Article 5, Section 15061(b)(3)).

ALTERNATIVES

1) Adopt Council Policy on Residential Transportation Demand Management (site development guidelines and policy changes-Attachment A):
   a. Identify El Camino Real, ITR 7 and 8, and the Downtown as target areas for required TDM.
   b. Require all attached housing development of four units or more within 1/3 of mile of light rail station, Caltrain Station, and high activity bus stops implement TDM site design techniques
   c. Require new development to provide:
      i Information kiosks on site or on adjacent right-of-way
      ii On-site rideshare and carpool contact information
      iii Secured and guest bicycle parking referenced to VTA Guidelines
      iv Designated exclusive pathway connections to sidewalks
   d. Optional Site Improvement Features:

i Encourage design of designated carpool loading area on site or immediately adjacent on the public street
ii Bus Shelter Improvements on adjoining streets

2) Modify Alternative 1.

3) Direct staff to provide City supported programmatic alternatives such as operating as lead agency for a neighborhood or project specific TDM association, new resident one-month pass, administering yearly transit passes for all residents of high density projects, updating TDM information displays on site, conducting annual surveys, operation of childcare facilities on site.

4) Direct staff to prepare incentives that would encourage the inclusion of comprehensive site and program TDM techniques in a future high-density residential project. The site would serve as a pilot project for residential TDM.

5) Do not adopt any changes to existing policies, guidelines, or development standards.

RECOMMENDATION

Staff recommends Alternative 1, to adopt a formal City Policy to require TDM site improvement techniques in targeted areas and to promote the use of the same TDM site improvement techniques in all multi-family housing developments. The City can strengthen its commitment to support alternative travel mode choices by modifying private development standards and policies. Currently, only the Tasman Fair Oaks Area has specific design requirements that support alternative modes of transportation (Tasman/Fair Oaks Area Pedestrian and Bicycle Circulation Plan of 2004). Staff finds that three areas of the City with the potential for new development are well served by public transit and should be targeted to enhance TDM. El Camino Real, Downtown, and the Fair Oaks Tasman ITR 7 and 8 are identified as opportunity areas for not only implementing site development TDM techniques but also potentially appropriate locations for future high density zoning that maximize the usefulness of the existing transit infrastructure.

Although the study is focused on High Density residential development, the analysis indicates that in a suburban situation density does not necessarily represent the traditional users of alternative travel modes. Therefore it is the closeness or accessibility to alternative modes of transportation that induce changes in travel behavior as much as any other zoning related factor. Due to this finding, staff also recommends that the policies for site development for TMD be extended to all types of multi-family housing (three or more attached units) within 1/3 of a mile of light rail stations, Caltrain Stations, and high activity bus stops.

Programmatic TDM measures are not cost effective for residential developments in Sunnyvale. Rents and homeowner's association dues would need to be raised up to $180 a year ($15/month) to cover the costs of ECO passes for VTA. Train passes are not available. Some residents will already be covered by their employers TDM programs which typically are more comprehensive and elastic than a residentially based program would be.

The recommended site improvement measures will make transit more convenient and may encourage its use to a greater extent.

Reviewed by:

Trudi Ryan, Planning Officer

Reviewed by:

Robert Paternoster
Director of Community Development Department

Prepared by: Kelly Diekmann, Project Planner

Approved by:

Amy Chan
City Manager

Attachments

A. Draft City Council Legislative Policy
B. High Density Geography and Bus Stops
C. High Density within ¼ Mile of VTA Transit
D. VTA Bus Route Map for Sunnyvale
E. Sunnyvale Census 2000 mode splits
F. Complete Citation of Applicable Goals and Policies
G. Study Issue Paper

Draft City Council Policy

SUBJECT Residential Transportation Demand Management

POLICY PURPOSE:

It is the City's policy to promote a range of transportation choices within the City. The City also endorses locating high-density development along major transportation corridors and transit lines and in close proximity to services and employment. The purpose of this legislative policy is to augment these policies and address geographical opportunities to implement strategies for reduction in single occupant vehicle trips and total vehicle miles traveled from high-density residential development. Strategies to reduce single occupant vehicle trips and miles traveled are collectively referred to as Transportation Demand Management (TDM).

POLICY STATEMENT:

New development and redevelopment in High Density and Very High Density zoning districts in targeted areas are required to implement TDM techniques. Further, it is strongly encouraged that practicable TDM techniques be incorporated in all High and Very High Density residential development throughout the city. In addition, all types of attached housing development within a 1/3 of mile of major transit stops shall implement TDM design techniques. These requirements are applicable to Condominium Conversion projects and mixed-use development as well.

REQUIRED SITE DESIGN TECHNIQUES

Targeted development areas are required to implement site development features and encouraged to consider program TDM measures as practicable.

Required Site Development Features

1. Information kiosks on site or on adjacent right-of-way
2. On-site rideshare and carpool contact information
3. Secured and guest bicycle parking referenced to VTA Guidelines
4. Designated exclusive pathway connections to sidewalks

Optional Site Development Features

1. Encourage design of designated carpool loading area on site or immediately adjacent on the public street
2. Bus Shelter Improvements on adjoining streets

TARGETED TDM AREAS

1. Downtown Area

The Downtown Specific Plan recognizes the resources of the existing Caltrain Station and Multi-Modal station at Frances Street and Evelyn Avenue and has a land use framework for both commercial and residential development patterns supportive of these resources. The highest density of development is encouraged in this area due to the access to the multi-modal station and the ability to maximize the investment in this facility. TDM techniques are required for all new and redeveloped Mixed Use and High Density Residential Blocks in the Downtown Specific Plan. Furthermore, High Density development within 1/3 mile of the Caltrain Station or within ¼ mile of El Camino Real whether part of the Downtown Specific Plan or not shall also implement TDM. Public and private resources should be allocated to support enhanced pedestrian and bicycle connections to the downtown area, specifically methods to increase connectivity for neighborhoods north of Downtown.

2. El Camino Real Corridor

It is the intent of the City of Sunnyvale to recognize that El Camino Real is more than a high volume automobile arterial but also the principle transit route in Sunnyvale with a complete sidewalk network. Sunnyvale supports high density zoning districts along El Camino Real where property is already designated for residential uses. Sunnyvale also supports mixed-use development for property zoned commercial rather than conversion to exclusive residential uses in an effort to maintain its current status as a commercial corridor destination serving the City. All mixed use and high density residential development with frontage along El Camino Real or within ¼ mile of El Camino Real shall implement TDM techniques.

3. Tasman / Fair Oaks Light Rail Corridor and ITR 7 and 8

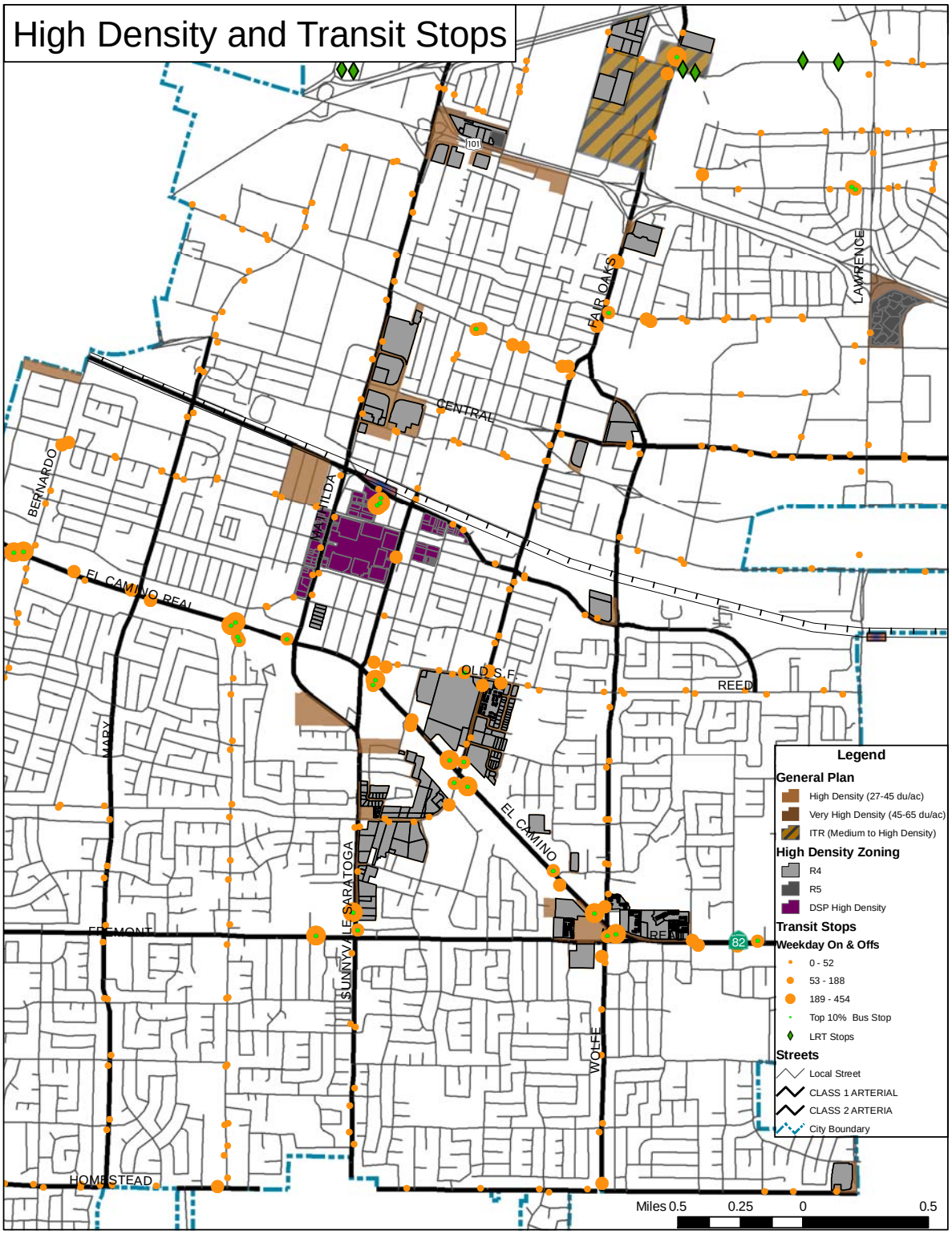
The light rail corridor provides the greatest opportunity for transit access to a multitude of Silicon Valley's high tech employers in Sunnyvale, Santa Clara, San Jose, and Mountain View. The location is also conducive to bicycling and walking due to its close proximity to major Sunnyvale Employment areas. Industrial to Residential (ITR) designations are in place to the east of the Fair Oaks Tasman Light Rail Station. Enhanced bicycle and pedestrian connectivity and design guidelines were also adopted for the area in 2004. High density and commercially zoned portions of ITR 7 and 8 are required to further implement TDM per this policy. The city is supportive of developing high-density housing within the ITR residential areas as well as in conjunction with substantial commercial development at the intersection of Fair Oaks Avenue and Tasman Drive. However, the commercial zoning shall be maintained to provide needed services for the neighborhood and shall not be changed to exclusive residential development without identifying an equal alternative commercial location to serve the neighborhood.

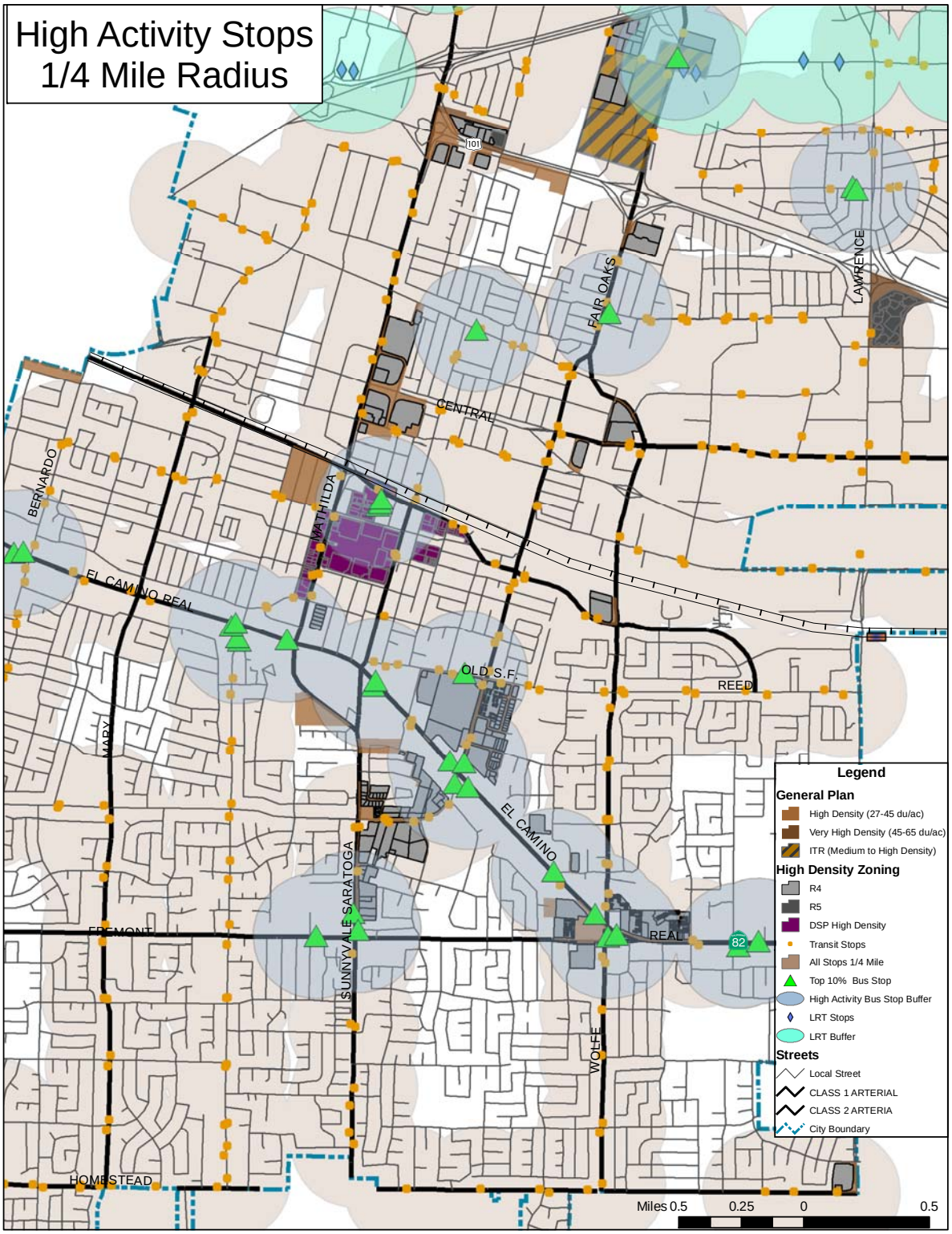
Sunnyvale is also supportive of high-density Transit Oriented Design (TOD) nodes around the light rail stops for the future to maximize the existing transit facility investment. It is the policy of the city that for all new or redevelopment in the project

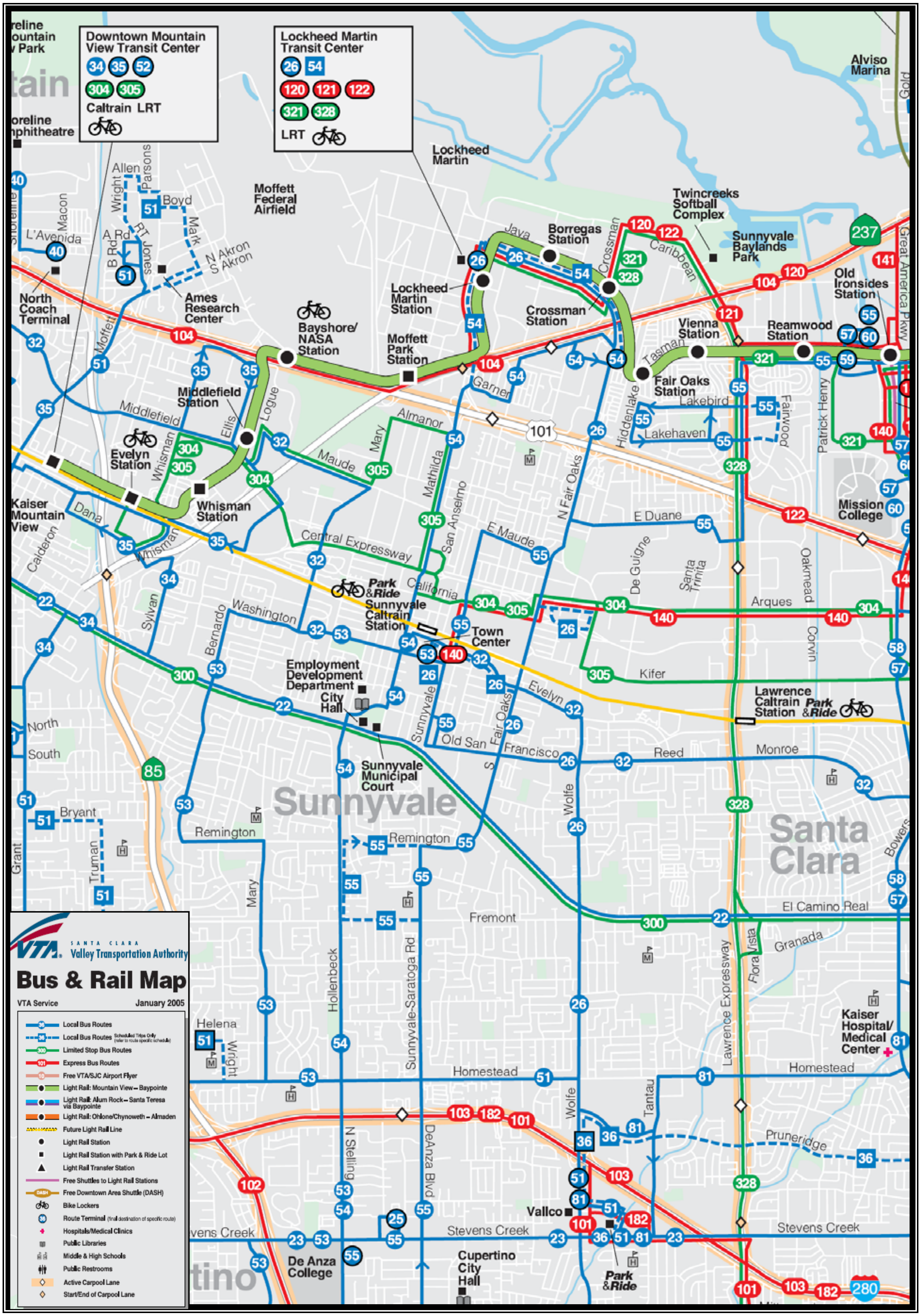
area to have public sidewalks widened to increase service, safety, and comfort for pedestrians in the vicinity of transit.

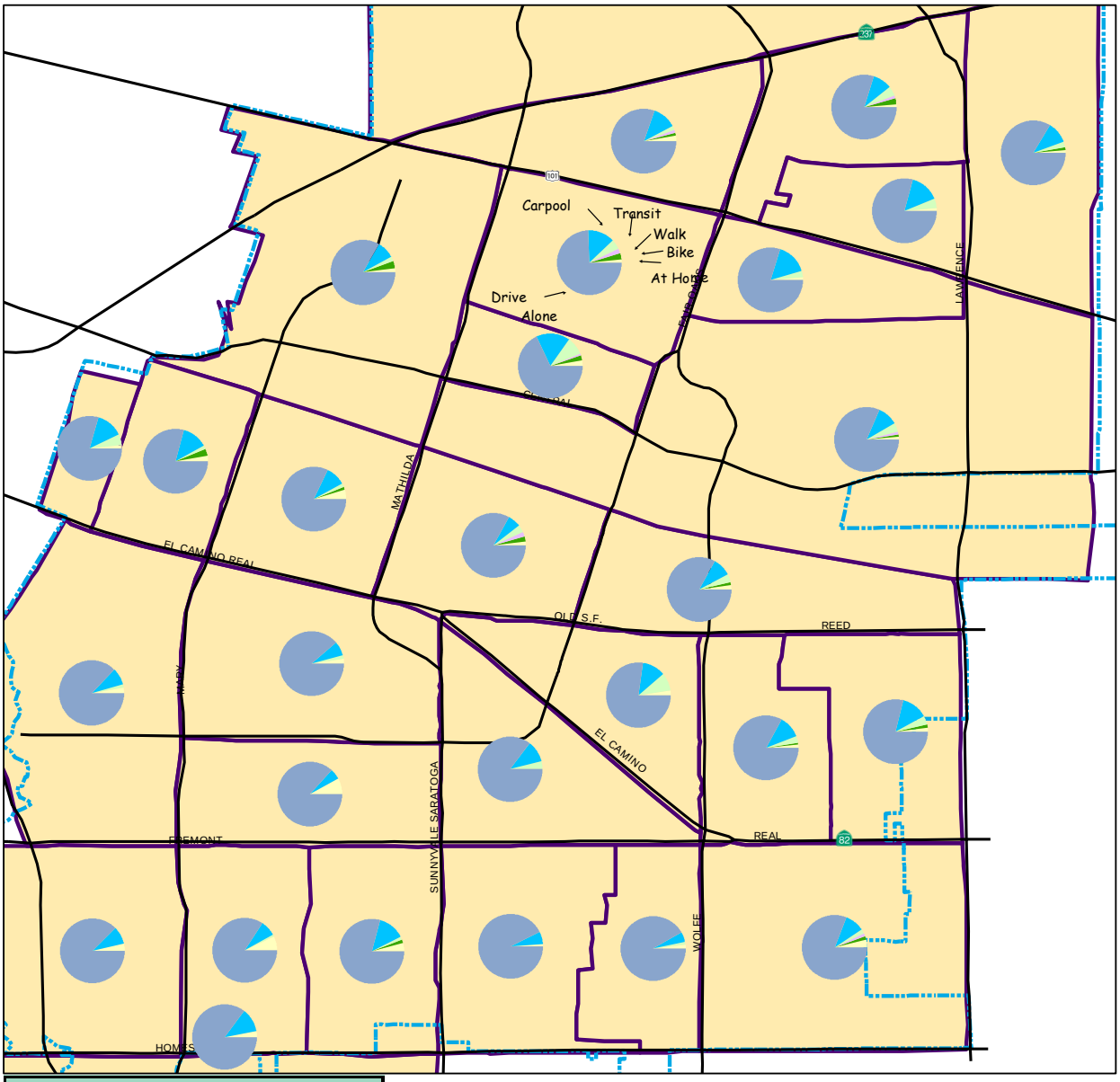
4. Development within 1/3 of a mile of major transit stops

The proximity to transit stops and accessibility to alternative mode choices is the primary factor in maximizing alternative transportation to automobiles. Therefore, all multi-family dwellings within a 1/3 of a mile light rail station, Caltrain Station, or a high activity commuting to work bus stop shall implement TDM techniques. Further, when there is a request for change in general plan designation or zoning within 1/3 of a mile of major transit stop the City shall consider supporting higher densities.


High Density and Transit Stops
CENTRAL
EL CAMINO REAL
OLD S.F.
REED
EL CAMINO
FREMONT
HOMESTEAD
SUNNYVALE SARATOGA
WOLFE
MATHILDA
BERNARDO
FAIR OAKS
LAWRENCE
MARY
Legend
General Plan
High Density (27-45 du/ac)
Very High Density (45-65 du/ac)
ITR (Medium to High Density)
High Density Zoning
R4
R5
DSP High Density
Transit Stops
Weekday On & Offs
0 - 52
53 - 188
189 - 454
Top 10% Bus Stop
LRT Stops
Streets
Local Street
CLASS 1 ARTERIAL
CLASS 2 ARTERIA
City Boundary
Miles 0.5 0.25 0 0.5


High Activity Stops
1/4 Mile Radius
101
FAIR OAKS
LAWRENCE
CENTRAL
BERNARDO
MATHILDA
EL CAMINO REAL
OLD S.F.
REED
MARY
EL CAMINO
SUNNYVALE SARATOGA
FREMONT
REAL
82
WOLFE
HOMESTEAD
Legend
General Plan
High Density (27-45 du/ac)
Very High Density (45-65 du/ac)
ITR (Medium to High Density)
High Density Zoning
R4
R5
DSP High Density
Transit Stops
All Stops 1/4 Mile
Top 10% Bus Stop
High Activity Bus Stop Buffer
LRT Stops
LRT Buffer
Streets
Local Street
CLASS 1 ARTERIAL
CLASS 2 ARTERIA
City Boundary
Miles 0.5 0.25 0 0.5


Downtown Mountain View Transit Center
34 35 52
304 305
Caltrain LRT
Lockheed Martin Transit Center
26 54
120 121 122
321 328
LRT
Alviso Marina
Lockheed Martin
Moffett Federal Airfield
Twincreeks Softball Complex
Sunnyvale Baylands Park
Borregas Station
Lockheed Martin Station
Crossman Station
Moffett Park Station
Bayshore/ NASA Station
Ames Research Center
North Coach Terminal
Vienna Station
Reamwood Station
Old Ironsides Station
Fair Oaks Station
Middlefield Station
Evelyn Station
Whisman Station
Kaiser Mountain View
Mission College
Park &Ride
Sunnyvale Caltrain Station
Town Center
Employment Development Department
City Hall
Sunnyvale Municipal Court
Sunnyvale
Lawrence Caltrain Station
Santa Clara
Kaiser Hospital/ Medical Center
Vallco
De Anza College
Cupertino City Hall
Central Expressway
El Camino Real
Homestead
Stevens Creek
Remington
Fremont
Lawrence Expressway
Sunnyvale-Saratoga Rd
DeAnza Blvd
N Stelling
Hollenbeck
Wolfe
Tantau
Pruneridge
Great America Pkwy
VTA Santa Clara Valley Transportation Authority
Bus & Rail Map
VTA Service
January 2005
Local Bus Routes
Local Bus Routes Scheduled Trips Only
Limited Stop Bus Routes
Express Bus Routes
Free VTA/SJC Airport Flyer
Light Rail: Mountain View – Baypointe
Light Rail: Alum Rock – Santa Teresa via Baypointe
Light Rail: Ohlone/Chynoweth – Almaden
Future Light Rail Line
Light Rail Station
Light Rail Station with Park & Ride Lot
Light Rail Transfer Station
Free Shuttles to Light Rail Stations
Free Downtown Area Shuttle (DASH)
Bike Lockers
Route Terminal
Hospitals/Medical Clinics
Public Libraries
Middle & High Schools
Public Restrooms
Active Carpool Lane
Start/End of Carpool Lane



Sunnyvale Mode of Transportation to Work	
% Drive Alone	81%
% Carpool	10%
% Public Transit	4%
% Bike	1%
% Walk	2%
% Work at Home	3%

Legend

Mode of Transp. to Work

- Drive Alone
- Carpool
- Transit
- Walk
- Bike
- At Home
- Census Tract Boundary
- City Boundary

NORTH

Miles

0 0.25 0.5 1 1.5

Land Use and Transportation Element

Regional

Policy R1.3 Promote integrated and coordinated local land use and transportation planning.

Policy R1.7 Contribute to efforts to minimize region-wide average trip length, and single-occupant vehicle trips.

Policy R1.9 Support flexible and appropriate alternative transportation modes and transportation system management techniques that reduce reliance on the automobile and serve changing regional and City-wide land use and transportation needs

Policy R1.10 Support land use planning that complements the regional transportation system.

Action Statements

R1.10.1 Encourage a variety of land use types and intensities on a regional level while maintaining and improving regional transportation service levels.

R1.10.2 Support alternative transportation services, such as light rail, buses, and commuter rail, through appropriate land use planning.

R1.10.3 Encourage mixed uses near transit centers.

Appropriate Housing

GOAL C2 ENSURE OWNERSHIP AND RENTAL HOUSING OPTIONS IN TERMS OF STYLE, SIZE, AND DENSITY THAT ARE APPROPRIATE AND CONTRIBUTE POSITIVELY TO THE SURROUNDING AREA.

Policy C2.1 Provide land use categories for and maintenance of a variety of residential densities to offer existing and future residents of all income levels, age groups and special needs sufficient opportunities and choices for locating in the community.

Policy C2.3 Maintain lower density residential development areas where feasible.

Action Statements

C2.3.1 Study the potential rezoning of properties in the R-4 and R-5 zoning districts to other zoning districts.

Policy C2.4 Determine appropriate density for housing based on site planning opportunities and proximity to services.

Action Statements

C2.4.1 Locate higher density housing with easy access to transportation corridors, rail transit stations, bus transit corridor stops, commercial services, and jobs.

Efficient Transportation

GOAL C3 ATTAIN A TRANSPORTATION SYSTEM THAT IS EFFECTIVE, SAFE, PLEASANT, AND CONVENIENT.

Action Statements

C3.1.5 Promote the reduction of single occupant vehicle (SOV) trips, and encourage an increase in the share of trips taken by all other forms of travel.

Policy C3.5 Support a variety of transportation modes.

Action Statements

C3.5.1 Promote alternate modes of travel to the automobile.

C3.5.2 Require sidewalk installation in subdivisions of land and in new, reconstructed or expanded development.

C3.5.3 Support land uses that increase the likelihood of travel mode split.

C3.5.4 Maximize the provision of bicycle and pedestrian facilities.

C3.5.5 Implement the City of Sunnyvale Bicycle Plan.

C3.5.6 Support an efficient and effective paratransit service and transportation facilities for people with special transportation needs.

C3.5.7 Ensure safe and efficient pedestrian and bicycle connections to neighborhood transit stops.

C3.5.8 Work to improve bus service within the City, including linkages to rail.

Policy C3.6 Minimize expansion of the current roadway system, while maximizing opportunities for alternative transportation systems and related programs.

Action Statements

C3.6.1 Develop clear, safe, and convenient linkages between all modes of travel; including, access to transit stations and stops, and connections between work, home, and commercial sites.

C3.6.2 Promote public and private transportation demand management.

C4.2.3 Develop incentive programs to reduce parking demand, support alternative transportation, and reduce peak period traffic.

Air Quality Sub Element

Policy 3.7B.1 Utilize land use strategies to reduce air quality impact.

Action Statements

3.7B.1a. Promote extension of transit systems, and locate higher density development/redevelopment along transit corridors.

3.7B.1b. Promote mixed land use development that provides commercial services such as day care, restaurants, banks and stores near employment centers, reducing auto trip generation by promoting pedestrian travel. Promote neighborhood commercial and park uses within residential developments to reduce short auto trip generation by making pedestrian and bicycle trips feasible (for example, require sidewalks, bike trails and bicycle parking areas).

Policy 3.7B.2 Assist employers in meeting requirements of Transportation Demand Management (TDM) plans for existing and future large employers and participate in the development of TDM plans for employment centers in Sunnyvale.

Action Statements

3.7B.2a. Enforce the provisions of the City's TDM ordinance covering businesses employing 100 or more persons.

3.7B.2b. Amend the City's existing TDM ordinance to comply with the BAAQMD's Trip Reduction Rule.

3.7B.2c. At the appropriate time, the City should explore the feasibility of seeking delegation of regulations which would affect smaller employers located within multi-tenant complexes, which are not included in the Trip Reduction Rule authority from the Bay Area Air Quality Management District.

3.7B.3c. Require site design to encourage transit circulation and stops/waiting areas for transit and carpools.

Community Design Sub Element

Policy 2.5B.2 Provide a safe and comfortable system of pedestrian and bicycle pathways.

Citywide Design Guidelines

Site Plan
A9. Provide pedestrian links between residential developments and nearby employment and shopping centers, schools and parks to encourage pedestrian activities.

Parking Circulation
A7. Separate pedestrian and automobile traffic paths, and minimize conflict areas for safety.

A8. Provide walkways to connect parking lots to building entrances. Define walkways by landscaping, lighting and paving.

A9. Large developments shall provide sufficient bicycle parking and covered lockable racks close to building entrances.

Downtown Specific Plan

GOAL B. ESTABLISH THE DOWNTOWN AS THE CULTURAL, RETAIL, FINANCIAL AND ENTERTAINMENT CENTER OF THE COMMUNITY, COMPLEMENTED BY EMPLOYMENT, HOUSING ANDTRANSIT OPPORTUNITIES.

GOAL C. PROMOTE A BALANCED STREET SYSTEM THAT SERVES ALL USERS WELL REGARDLESS OF THEIR MODE OF TRAVEL.

Policy C.2. Encourage strong pedestrian and bicycle linkages through the downtown.

Policy C.3. Promote the use of public transit by intensifying land use and activities near transit cores.

Policy C.4. Encourage shared parking in the downtown to minimize the amount of land devoted for parking areas and manage parking so it does not dominate mode choice decisions or the built environment.

Policy C.5. Enhance transit areas and multimodal connections such as the train station on Evelyn with the bus transfer facility on Frances and other downtown transit locations.

Public Improvements for Future Downtown

Chapter 7 Circulation Plan

- Enhancement of bus transfer facility on Frances Street
- Creation of bicycle lanes on Evelyn, Iowa and Sunnyvale Avenues
- Installation of Mathilda Avenue railroad overpass improvements

Housing and Community Revitalization Sub Element

Policy A.1 Maintain a supply of residential land for new housing construction.

Action Statements

A.1.d Study increasing the density of residential areas near transit stops and along major transportation corridors in conjunction with regional transportation plans.

Policy A.3 Continue to allow housing in commercial zoning districts.

Action Statements

A.3.a Maintain provisions of the zoning code that permit housing to be constructed in commercial districts after planning review.